BLM SALMON DISTRICT OFFICE (PWS 7300007)
SOURCE WATER ASSESSMENT OPERATOR FINAL REPORT

May 13, 2003

State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the BLM Salmon District Office, Salmon, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The BLM Salmon District Office drinking water system is non-transient system consisting of one ground water well source, North Well. The system serves approximately 20 people through 1 connection.

Final susceptibility scores are derived from equally weighing system construction scores, hydrologic sensitivity scores, and potential contaminant/land use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other categories results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential Contaminants/Land Uses are divided into four categories, inorganic contaminants (IOCs, i.e. nitrates, arsenic), volatile organic contaminants (VOCs, i.e. petroleum products), synthetic organic contaminants (SOCs, i.e. pesticides), and microbial contaminants (i.e. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of overall susceptibility, North Well rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. Hydrologic sensitivity rated moderate and system construction rated high for the well. Land use scores were moderate for IOCs, and low for VOCs, SOCs, and microbial contaminants.

No SOCs or VOCs have ever been detected in the well or its distribution system. Traces of the IOCs arsenic, fluoride, nitrate, and sodium have been detected in the tested water and each have been in concentrations significantly below maximum contaminant levels (MCLs) set by the EPA. Total coliform bacteria have been detected once in the distribution system (August 2000).

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the BLM Salmon District Office, drinking water protection activities should first focus on maintaining the requirements of the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system's components and its capacity). Any spills that occur within the delineated area should be carefully monitored, as should any future development. No chemicals should be stored or applied within a 50-foot radius of the wellhead, and the 50 foot area should be kept free of all activity, including that of livestock. As most of the designated areas are outside the direct jurisdiction of the BLM Salmon District Office, making partnerships with state and local agencies and industry groups are critical to success of drinking water protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation is near both urban and residential land uses. Public education topics could include proper lawn and garden care practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting), or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE BLM SALMON DISTRICT OFFICE, SALMON, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the rankings of this assessment mean.** Maps showing the delineated source water assessment areas and the inventory of significant potential sources of contamination identified within those areas are attached. The lists of significant potential contaminant source categories and their rankings, used to develop this assessment, are also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the EPA to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho DEQ recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The BLM Salmon District Office drinking water system is non-transient system consisting of one ground water well source, North Well. The system serves approximately 20 people through 1 connection.

No SOCs or VOCs have ever been detected in the well or its distribution system. Traces of the IOCs arsenic, fluoride, nitrate, and sodium have been detected in the tested water and each have been in concentrations significantly below MCLs set by the EPA. Total coliform bacteria have been detected once in the distribution system (August 2000).

Defining the Zones of Contribution – Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. Washington Group, International (WGI) used a refined computer model approved by the EPA in determining the time-of-travel (TOT) zones for water associated with the Lemhi Valley aquifer. The computer model used site-specific data, assimilated by DEQ and WGI from a variety of sources including local area well logs and hydrogeologic reports summarized below.

Hydrogeologic Conceptual Model

The Upper Salmon River Basin occupies approximately 1,170 square miles in east-central Idaho. The basin consists of four hydrologic provinces: Lemhi Valley, Pahsimeroi Valley, Round Valley, and Upper Salmon River. The Round Valley and Upper Salmon River provinces are drained by the Salmon River, while the Lemhi and Pahsimeroi provinces are drained by northwest-flowing tributaries of the Salmon River. The basin is included in the Northern Rocky Mountain geomorphic province, which is characterized by high massive mountains and intermontane valleys with variably thick accumulations of sediment (Parliman, 1982, p.4). Surface water – ground water interaction in the basin's valleys are complex, however, upper river reaches generally recharge the valleys aquifers while the lower river reaches receive the aquifers discharge (Parliman, 1982, p. 13). The hydrogeology of the Lemhi Valley Hydrologic province is described below.

Lemhi Valley Hydrologic Province

The Lemhi Valley hydrologic province is a southeast to northwest trending basin located between the Lemhi Range to the southwest and the Beaverhead Mountains to the northeast. Annual precipitation is 7 inches on the valley floor and increases to over 42 inches on parts of the Lemhi Range (Donato, 1998, p. 3). The Lemhi River runs along the axis of the basin with numerous tributaries draining the surrounding mountains. The valley fill is primarily Quaternary aged gravel with intercalated sand and silt (Donato, 1998, p. 3). Alluvial deposits down basin from the town of Lemhi are generally less than 60 feet thick. The upper basin deposits exceed 200 feet in thickness in several places (Donato. 1998, p. 3). A constriction zone occurs north of Lemhi where the bedrock has been uplifted resulting in alluvial deposits less than 20 feet thick and only 3,300 feet wide. The constriction zone forms a partial hydrologic barrier that effectively splits the aquifer in two (Spinazola, 1998, p. 3).

The bedrock is composed primarily of metamorphic, volcanic, intrusive, and sedimentary rocks that are Middle Proterozoic to Tertiary in age (Donato, 1998, p. 3).

The valley-fill aquifer is recharged primarily through precipitation on the surrounding mountains. Seepage losses from surface water bodies and infiltration from irrigation, interaquifer flow, and septic tanks also recharge the aquifer (Parliman, 1982, p. 13). Six of 14 measured reaches of the Lemhi River downstream from Leadore contribute to aquifer recharge after the irrigation season ends. During the irrigation season, all reaches are gaining from ground water with the exception of one, which was losing approximately 1 ft3/sec/mi (Donato, 1998, Table 2).

Natural discharge of ground water occurs as river gains along the Lemhi River, evapotranspiration, and ground-water underflow into the Upper Salmon River hydrologic province (Donato, 1998, pp. 11-18). Donato (1998, pp. 18-19) estimates aquifer discharge as underflow to be 500 to 3,000 acre-ft/yr using Darcy's equation and 7,415 acre-ft/yr (1.5 percent of the total annual basin yield) using a water budget method.

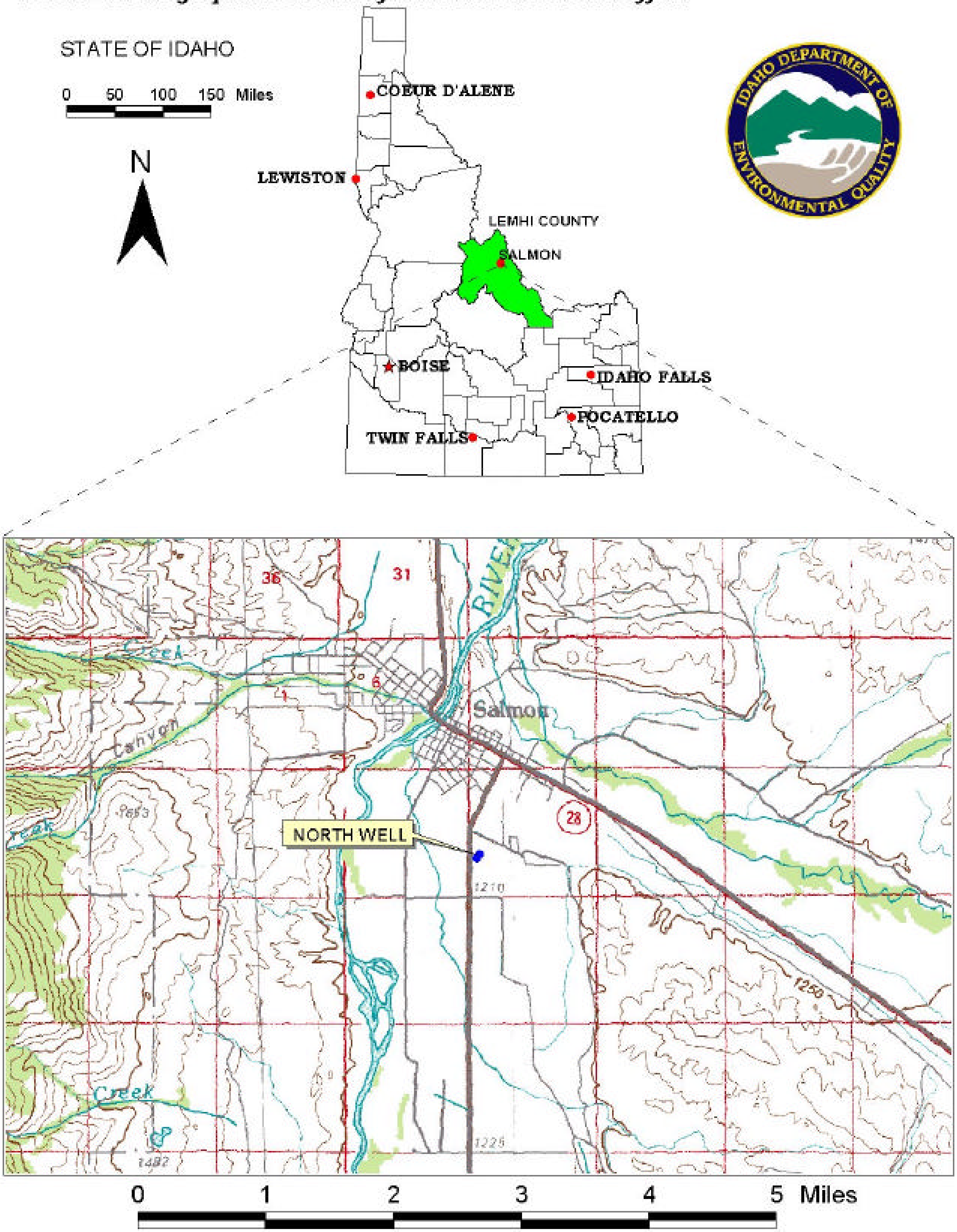
Ground-water flow direction is generally to the Lemhi River and north, down the basin toward the confluence with the Salmon River at the city of Salmon (Donato, 1998, Figure 8). Estimates of hydraulic conductivity, based on analysis of specific capacity data using the method of Walton (1962, p.12), range from 27 to 56 ft/day with a geometric mean of 39 ft/day. The average aquifer thickness is 11 feet, based on the average saturated open interval in the wells. The geometric mean hydraulic conductivity (39 ft/day) is comparable to values presented by Spinazola (22 ft/day; 1998 pp. 6-7) for an aquifer thickness of 16 feet and Donato (40 ft/day; 1998, p. 18) for a cross section of the aquifer with an average thickness of 20 feet.

The Lemhi model will be used to delineate capture zones for the three PWS wells located in the Lemhi Valley hydrologic province. Initial model boundaries consist of constant-head line sinks representing the Lemhi River, Salmon River, Texas Creek, Eighteen mile Creek, and Timber Creek. Constant-flux line sinks backed by no-flow boundaries will be placed on the basin's margin to represent recharge along the bedrock/valley-fill contact.

In the absence of published estimates of aerial recharge and evapotranspiration, aerial recharge values of 10 percent or less of the average annual precipitation on the valley floor (7 inches) will be considered. The geometric mean hydraulic conductivity value of 39 ft/day is proposed for simulating the base-case aquifer conditions. The proposed effective porosity is 0.3, which is the default value presented in Table F-3 of the Idaho Wellhead Protection Plan for unconsolidated alluvium (IDEQ, 1997, p. F-6). The proposed aquifer thickness is equivalent to the average open interval of 11 feet. Base elevation of the aquifer was set at 3,924 feet above mean sea level (msl), which is approximately 11 feet below the lowest constant-head value in the model domain.

The delineated source water assessment area for the wells of the BLM Salmon District Office can best be described as a sector which extends approximately 6000 feet to the base of the hills in a southeasterly direction from the wellhead, and widens to approximately 4000 feet (Figure 2). The actual data used by WGI in determining the source water assessment delineation area is available from DEQ upon request.

FIGURE 1. Geographic Location of BLM Salmon District Office



Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ, the BLM Salmon District Office, and from available databases.

The dominant land use outside the area of BLM Salmon District Office is agriculture. Land use within the immediate area of the wellhead is urban.

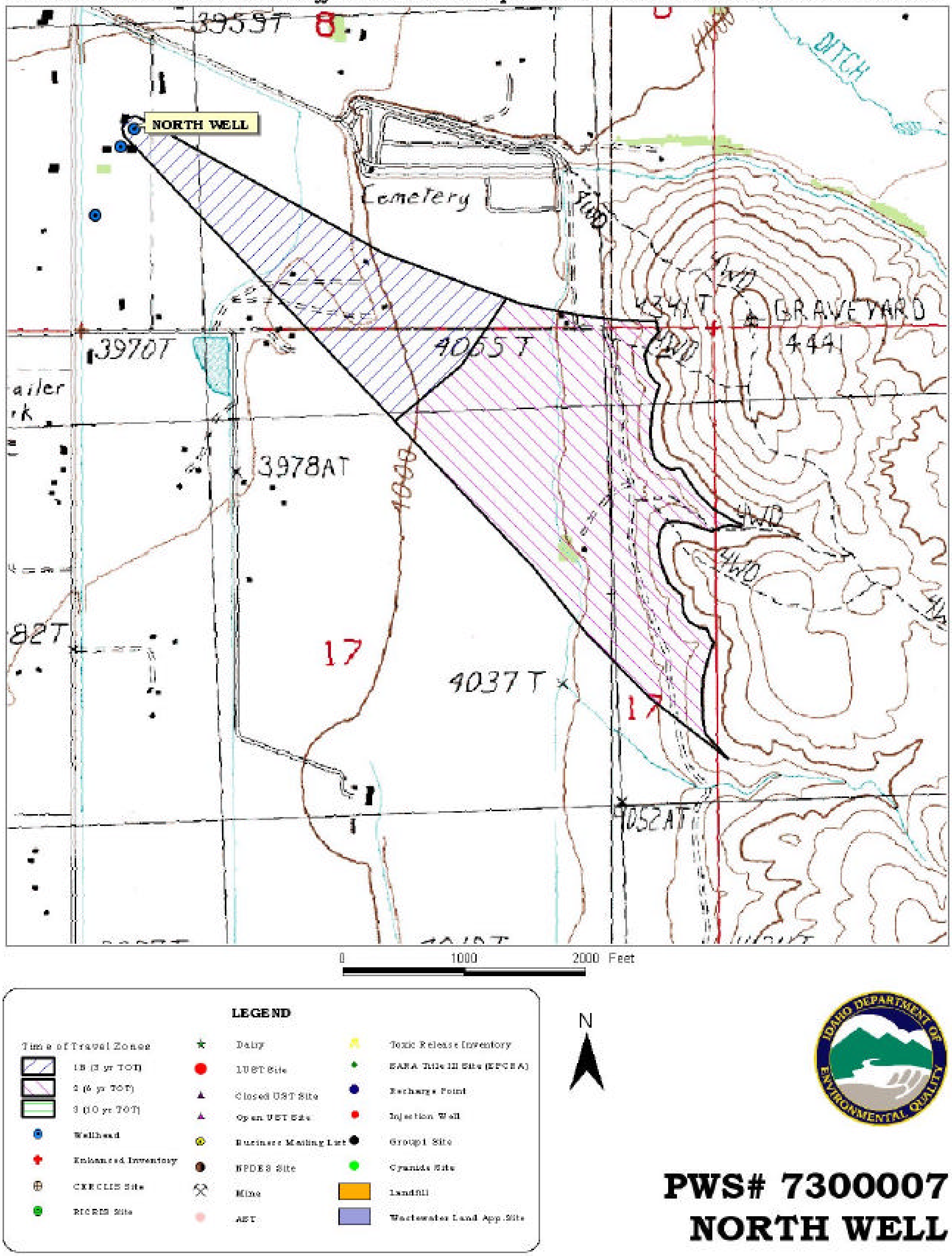
It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the <u>potential</u> for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted in July and August 2002. This involved identifying and documenting potential contaminant sources within the BLM Salmon District Office Source Water Assessment Areas through the use of computer databases and Geographic Information System maps developed by DEQ.

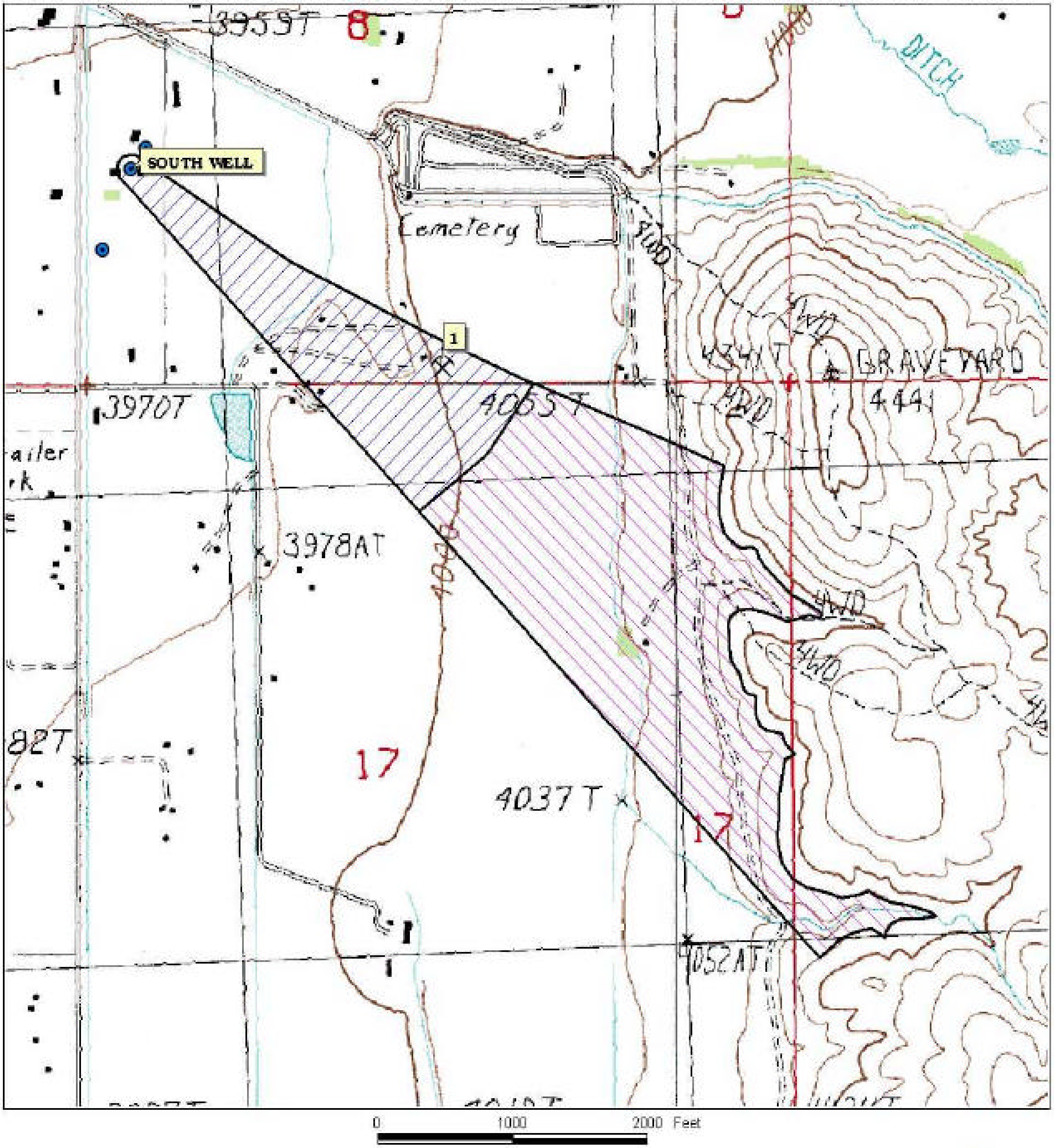
The delineation for the BLM Salmon District Office well does not contain any potential point sources, however, the amount of agricultural land within the delineation was factored into the rating.

FIGURE 2. BLM Salmon District Office Delineation Map and Potential Contaminant Source Locations



PWS# 7300007
NORTH WELL

FIGURE 3. BLM Salmon District Office Delineation Map and Potential Contaminant Source Locations



PWS# 7300007
SOUTH WELL

Section 3. Susceptibility Analyses

The well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Appendix A contains the susceptibility analysis worksheets. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquitard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

The hydrologic sensitivity rated moderate for the well. Favorably affecting the score is the poorly- to moderately-drained nature of the soils of the region, which retards the downward movement of contaminants. Negatively affecting the score was the fact that the depth to first water is less than 300 feet, no aquitard is present above the producing zone of the well, and the vadose zone is composed of predominantly permeable (gravel and sand) materials.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in Sanitary Surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

The North Well rated high for system construction. The well is 33 feet deep and pulls its water from a torch-cut perforated section between 18 feet below ground surface (bgs) and 30 feet bgs. The well is not in a 100 year floodplain, favorably affecting the score. The casing extends into a unit of low permeability, however no annular seal was installed, based on the well log. As the well's total depth is only 33 feet deep, the highest production does not come from more than 100 feet below static ground water level. The latest sanitary survey (1990) noted that casing height is not at least 12 inches above ground level, and the wellhouse needs to be cleaned and not used for storage.

The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all Public Water Systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the requirements include casing thickness, well tests, and depth and formation type that the surface seal must be installed into. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Six inch diameter wells require a casing thickness of at least 0.280 inches. Well tests are required at the design pumping rate for 24 hours or until stabilized drawdown has continued for at least six hours when pumping at 1.5 times the design pumping rate. A point was added to the well's score because all current construction standards are not being met. Though the well may have met standards at the time of construction, current construction standards are more stringent.

Potential Contaminant Source and Land Use

The BLM Salmon District Office wells rated moderate for IOCs (e.g. arsenic, nitrate), and low for SOCs (e.g. pesticides), VOCs (e.g. petroleum products) and microbial contaminants (e.g. bacteria). There are no point sources of potential contamination, however the amount of agricultural land within the delineation was factored into the rating.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area, because a pathway for contamination already exists. Additionally, the storage or application of any potential contaminants within 50 feet of the wellhead will automatically lead to a high score. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and much agricultural land use contribute greatly to the overall ranking. In terms of total susceptibility, the BLM Salmon District Office well has a moderate susceptibility rating to IOCs, VOCs, SOCs, and microbial contaminants.

Table 1. Summary of the BLM Salmon District Office Susceptibility Evaluation

	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
Source		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
North Well	M	M	L	L	L	H	M	M	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

The BLM Salmon District Office drinking water system is non-transient system consisting of one ground water well source, North Well. The system serves approximately 20 people through 1 connection.

In terms of overall susceptibility, North Well rated moderate for IOCs, VOCs, SOCs, and microbial contaminants. Hydrologic sensitivity rated moderate and system construction rated high for the well. Land use scores were moderate for IOCs, and low for VOCs, SOCs, and microbial contaminants.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For the BLM Salmon District Office, drinking water protection activities should first focus on maintaining the requirements of the sanitary survey. Any spills from potential contaminant sources should be carefully monitored, as should any future development in the delineated areas. Practices aimed at maintaining minimal leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. Efforts to maintain reduced levels of disinfection byproducts should be employed . The 50 feet sanitary setback distance of the well must be kept clear of all potential contaminants including stored and applied chemicals, and livestock. Most of the designated areas are outside the direct jurisdiction of the BLM Salmon District Office, making partnerships with state and local agencies and industry groups critical to success of drinking water protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineations are near to urban and residential land uses. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the U.S. Environmental Protection Agency. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

A system must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls Regional DEQ Office	(208) 528-2650
State DEQ Office	(208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper, mlharper@idahoruralwater.com, Idaho Rural Water Association, at 1-800-962-3257 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

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Donato, M.M., 1998, Surface-Water/Ground-Water Relations in the Lemhi River Basin, East Central Idaho, United States Geological Survey, Water-Resources Investigations Report 98-4185, 20 p.

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Parliman, D.J., 1982, Gound-Water Quality in East-Central Idaho Valleys, U.S. Geological Survey, Open File Report 81-1011.

Spinazola, J., 1998, A Spreadsheet Notebook Method to Calculate Rate and Volume of Stream Depletion by Wells in the Lemhi River Valley Upstream from Lemhi, Idaho, Bureau of Reclamation Pacific Northwest Region, Boise, Idaho, March, 19 p.

Well Log for Salmon District Well Drilling, District Admin. Site. 1984

Appendix A

BLM Salmon District Office Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report   Public Water System Name : BLM SALMON DIST OFFICE   Well# : NORTH WELL

Public Water System Number 7300007   02/24/2003 9:34:51 AM

1. System Construction

		SCORE
Drill Date	April 1984	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	NO	0
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	NO	1
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		5

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		4

3. Potential Contaminant / Land Use - ZONE 1A

		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	YES	4	0	0	
4 Points Maximum		4	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B		8	4	4	4
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		2	2	2	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score		12	8	8	6

4. Final Susceptibility Source Score

	IOC	VOC	SOC	Microbial
4. Final Susceptibility Source Score	11	11	11	11
5. Final Well Ranking	Moderate	Moderate	Moderate	Moderate